UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

SQ-14J

MEMORANDUM

DATE: JUN 19 1992

SUBJECT: Review of the Draft Quality Assurance Project Plan (QAPjP) for Fund-Lead Remedial Investigation/Feasibility Study Activities at the Albion-Sheridan Township Landfill, Albion, Michigan

FROM: George C. Schupp, Chief
Quality Assurance Section

TO: Mary Tyson, Chief
Sect. 2, Michigan/Wisconsin Remedial Response Branch

ATTENTION: Mary Beth Novy, Remedial Project Manager

We have reviewed the draft Quality Assurance Project Plan (QAPjP) for fund-lead remedial investigation/feasibility study (RI/FS) activities at the Albion-Sheridan Township Landfill, Albion, Michigan. This subject QAPjP was received on May 8, 1992 (QAS log-in #1737).

Based on our expertise and QA experience, several comments identified in our review of the QAPjP need to be addressed in order to receive formal approval by the Regional Quality Assurance Manager. However, those comments annotated with an asterisk(*) are being provided to you for your review and consideration strictly from our concern to further protect the environment, public health, and safety, or for clarity.

QAS requests that future submittals consist of only revised pages. This will expedite review and, presumably, preparation of future submittals.

If you have any questions about the attached comments, please call Wade Hillman of my staff at 886-0879.

Attachment

cc: Kaushal Khanna, HSRLT-5J
Charles Elly, SL-10C

ATTACHMENT

I. Format

* All pages of the submittal should be numbered in the document control format, including the SAP, WP, and Appendices.

II. Project Description (Sect. 1)

A. Please reference the Tables in the SAP for a list of DQO's for each test to be done, as this information is a required part of this section of the QAPjP (1.6, pg. 1.7).

B. Please specify the usages to be made of the data from the many tests being done for this project, expecially that from the many SAS's.

C.* As fly ash of unknown origin is known to have been disposed of at this site, consideration should be given to testing for dioxins/furans.

III. Project Organization (Sect. 2)

The wording and organization on page 2-5 should be corrected to clearly delineate which office/officer has each the responsibilities given in each bullet entry. The present text lacks clarity (1.6, pg. 1-7).

IV. QA Objectives (Sect. 3)

A. Please delete "of" from the heading of this section. The "of" gives a different meaning from that in the Model QAPjP (3.0, pg. 3-1 and Table of Contents).

B. Please complete the section with a pg. 3-4, as pg. 3-3 ends with an incomplete paragraph.

V. Sample Custody (Sect. 5)

Please correct the typographical error "OLMO1.01" to OLMO1.1 (5.2, pg. 5-4).

VI. Analytical Procedures (Sect. 7)

Tests on leachate samples typically require project-specific method modifications to overcome interferences and other complications typically encountered with this matrix. Hence, it will need to be discussed with CRL what modifications to the methods proposed for use with the leachate samples are appropriate for this site.

VII. Data Reduction, Validation, and Reporting (Sect. 9)

Please correct the typographical error ILMO1.1 to ILMO1.0 (9.1.2, pg. 9-1).

VIII. Preventive Maintenance (Sect. 11)

Please provide information on preventive maintenance procedures for instruments used for SAS and non-CLP tests.

IX. Data Assessment (Sect. 12)

A. Please restore the reference to the analysis of blanks to the sentence that lists items to be assessed in determining accuracy (12.1, pg. 12-1).

B. Please restore also the reference to the assessment of bottle blanks data as being potentially of interest in determining accuracy (12.2.2, pg. 12-2).

X. Tables

A. Table 1 needs the following changes:

1. Please change 50 ug/l to 25 ug/l, 1700ug/l to 800 ug/l, and 50,000 ug/l to 25,000 ug/l for the entries for 2,4,5-trichlorophenol, 2-nitroaniline, 3-nitroaniline, 2,4-dinitrophenol, and 4-nitrophenol (pg. 1-2).

2. Please change 50 ug/l to 25 ug/l, 1700 to 800 ug/l, and 50,000 ug/l to 25,000 ug/l for 4-nitroaniline, 4,6-dinitro-2-methylphenol, and pentachlorophenol (pg. 1-3).

3. Please change 20 ug/l to 10 ug/l for 3,3'-dichlorobenzidine (Table 1-3).

B. Table 3 (pg. 3-1 to 3-4) should be replaced with the comparable Table from the SOW Low Concentration Water for Organics Analysis, 6/91. This Table is provided as Addendum 1 to this Attachment.

C. Table 4 (pg. 4-1) should be replaced with the comparable Table from the up-to-date SAS. This Table is provided as Addendum 2 to this Attachment.

D. Table 5 needs the following changes:

1. Please specify that the listed holding times are technical holding times, i.e. are based on time elapsed from time of sample collection (e.g. put this information in a footnote to the Table).

2. Residential well and surface water samples to be tested for volatiles should be preserved with HCl to a pH less than or equal to 2, unless sample characteristics make preservation impossible. The technical holding time (for preserved samples) should be 14 days. Please so specify (pg. 5-1).

3. The time allowed until extraction for water samples to be tested for semivolatiles should be 7 days from sample collection, not 5 days (pg. 5-1).

4. Residential well and surface water samples should be preserved with HCl to a pH less than or equal to 2, which will not necessarily entail the addition of exactly 5 mls of HCl. Please correct the Table entry (pg. 5-1).

5. Residential well and surface water samples to be tested for cyanide should be preserved with NaOH to a pH greater than or equal to 12, not 2. Ascorbic acid, also, should be added if residual chlorine is present. Please correct the Table entry (pg. 5-1).

6. The correct volume to collect for residential well and surface water samples to be tested for SV/pest./PCB's is 4-1 L bottles, not 3-1 L bottles. Please correct the Table entry (pg. 5-1).

7. Comment IX.D.3, above, applies also to groundwater samples (pg. 5-2).

8. Comment IX.D.2, above, applies also to groundwater samples (pg. 5-2).

9. The second part of comment IX.D.5 applies also to groundwater samples (pg. 5-2).

10. Soil samples to be tested for SV's should be extracted within 14 days of sample collection. Please correct the Table entry (pg. 5-4).

11. Soil samples to be tested for volatiles should have a 14 day technical holding time. Please correct the Table entry (pg. 5-4).

12. Holding times for TCLP parameters should be specified. The appropriate specifications from the method are provided as Addendum 3 to this Attachment.

XI. SAS's (Appendix A)

A. SAS's for corrosivity, pH, reactivity, and flashpoint, as specified in Table 1 of the SAP, need to be provided.

B. SAS's for low level organics and inorganics parameters for leachate samples, as specified in Table 2 of the SAP, need to be provided.

C. Comment VII, above, applies to the SAS's to be used for leachate.

D. Supplementary language required by the Region 5 CRL, which is explained in Addendum 4 to this Attachment, needs to be included in the designated sections of all the SAS's.

E. The project phase is incorrectly specified in many of the SAS's as RA. Please correct these entries to RI/FS.

F. Surface water samples should have field blanks. Please so specify and correct the sample totals for the SAS's, accordingly.

G. The SAS for water samples to be tested for low level organics needs to be updated to designate use of the Low Level Waters for Organics, 6/91, SOW instead of the SOW OLC01.0. An updated SAS is provided as Addendum 5 to this Attachment.

H. The SAS for water samples to be tested for low level inorganics also needs to be updated. See Addendum 6 to this Attachment for an updated SAS to replace the outdated one that was provided in this Appendix.

I. Please delete method 9252 from this Appendix. CEC should be determined by method 9081 or some similar method. Other possibilities can be discussed, if necessary.

J. Please note that some of the TCLP metals tests of soil samples are to be done by GFAA according to Attachment 1 and Table 1 of the SAS, but point 12 of the SAS describes only ICP. Please supplement point 12 with information for GFAA, or explain its absence. Also, please delete the alternative of SOW 7/88 procedures and specify the use of the other option exclusively, i.e. the SOW ILM01.0.

K. Additional information for the SAS for soil samples to be tested for TOC needs to be added to Attachment 9 of the SAS. See Addendum 7 to this Attachment for the requisite language.

Also, Attachments 1, 7, 8, and 9 of this SAS are provided in duplicate. Please delete one set of the duplicated pages.

L. It is noted be QAS that additional updating of some of the SAS's was specified in the RSCC's responses to the a 6/5/92 letter from the contractor to the RSCC. These comments by the RSCC will not be repeated here, but should be addressed in the next QAPjP revision, as should the QAS comments in this Attachment. In addition, further CRL comments may be forthcoming, but in the interest of expediting the preparation of revisions, this memo is being provided now. The contractor should check with QAS before submittal of the next revision to see if additional CRL comments have been received and need to be addressed.

XII. CLP Paperwork and Shipping Information (Appendix B)

Please replace the organic and inorganic combined COC/TR forms with the updated versions provided as Addendums 8 and 9 to this Attachment.

XIII. SAP

A.* Monitoring wells to be sampled for organics should use screens consisting of stainless steel, teflon, or other inert material, not PVC (2.4.2, pg. 2-11).

B. Please correct the specification that inorganics samples will be filtered to a specification that metals samples will be filtered, as filtering is not appropriate for CN samples (2.4.4.2, pg. 2-18).

C. Please specify the data usage for surface water, sediment, and residential well samples, or specify where this information can be found (2.5, pg. 2-19; 2.6, pg. 2-20; and 2.7.1, pg. 2-21).

D. Please specify whether water will be decanted from sediment samples before transfer to sample containers (2.6, pg. 2-21).

E. Region 5 now requires that bottle requirements language be agreed to. Please add the appropriate language, as specified in Addendum 10 to this Attachment.

F. Tables

1. Please explain why trip blanks for volatiles are listed on separate lines, rather than being noted in the appropriate column on the same line as the associated investigative samples.

2.* It would be useful to note, e.g. in footnotes, that MS and sample duplicates replace MS/MSD for inorganics.

3. The TCLP test requires MS/MSD. Please add this entry to the Table (Table 1).

4.* The DQO level for ASTM tests should be III, not II, if an off-site lab is being used (Table 3).

5. The sampling and analysis summary Table should include information on the field screening surveys described in the two SOPs for electromagnetic and resistivity parameters (Table 6).

6. Tables 8-11 should include specification of field blanks for SAS tests.

7. Please delete the entry of MS/MSD for TAL inorganics and include a specification of MS and sample duplicates for these. See comment XII.F.2, above.

G. SOPs (Appendix A)

1. SOPs need to be provided for the GPR, magnetometry, methane, and temperature parameters.

2. The conductivity SOP should include specification of duplicates (pg. 2).

3. Composition of the calibration and spiking standards to be used for the field GC needs be specified (Field GC SOP, pg. 1).

4. Completeness for field GC tests needs to be 90% or better. Please correct the specification in Table A-2, accordingly.

5. Calibration verification for field tests needs to be verified after every 10 investigative samples measured. Please correct the specification given in the dissolved oxygen SOP (pg. 3).

6. The dissolved oxygen SOP should also include a specification for duplicates (pg. 3).

7. Comment XII.D, above, applies also to the sediment sampling SOP (pg. E-2).

8. Please specify that soil sampling shovels or trowels will consist of stainless steel or other inert material, not PVC (Grab Soil Sampling SOP, pg. 1).

H. Soil Vapor Survey (Appendix D)

Please include sample collection and analysis procedures for the soil vapor tests, as specification of sampling pump operating procedures only is insufficient.

Addendums

TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

Volatiles	CAS Number	Quantitation Limits Water ug/L
1. Chloromethane	74-87-3	1
2. Bromomethane	74-83-9	1
3. Vinyl chloride	75-01-4	1
4. Chloroethane	75-00-3	1
5. Methylene chloride	75-09-2	2
6. Acetone	67-64-1	5
7. Carbon disulfide	75-15-0	1
8. 1,1-Dichloroethene	75-35-4	1
9. 1,1-Dichloroethane	75-34-3	1
10. cis-1,2-Dichloroethene	156-59-4	1
11. trans-1,2-Dichloroethene	156-60-5	1
12. Chloroform	67-66-3	1
13. 1,2-Dichloroethane	107-06-2	1
14. 2-Butanone	78-93-3	5
15. Bromochloromethane	74-97-5	1
16. 1,1,1-Trichloroethane	71-55-6	1
17. Carbon Tetrachloride	56-23-5	1
18. Bromodichloromethane	75-27-4	1
19. 1,2-Dichloropropane	78-87-5	1
20. cis-1,3-Dichloropropene	10061-01-5	1
21. Trichloroethene	79-01-6	1
22. Dibromochloromethane	124-48-1	1
23. 1,1,2-Trichloroethane	79-00-5	1
24. Benzene	71-43-2	1
25. trans-1,3-Dichloropropene	10061-02-6	1
26. Bromoform	75-25-2	1
27. 4-Methyl-2-pentanone	108-10-1	5
28. 2-Hexanone	591-78-6	5
29. Tetrachloroethene	127-18-4	1

TARGET COMPOUND LIST (TCL) AND
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)
(CONT'D.)

Volatiles	CAS Number	Quantitation Limits Water ug/L
30. 1,1,2,2-Tetrachloroethane	79-34-5	1
31. 1,2-Dibromoethane	106-93-4	1
32. Toluene	108-88-3	1
33. Chlorobenzene	108-90-7	1
34. Ethylbenzene	100-41-4	1
35. Styrene	100-42-5	1
36. Xylenes (total)	1330-20-7	1
37. 1,3-Dichlorobenzene	541-73-1	1
38. 1,4-Dichlorobenzene	106-46-7	1
39. 1,2-Dichlorobenzene	95-50-1	1
40. 1,2-Dibromo-3-chloropropane	96-12-8	1

NOTE: Except for Methylene chloride, the quantitation limits in this table are set at the concentrations in the sample equivalent to the concentration of the lowest calibration standard analyzed for each analyte.

In the case of Methylene chloride, the CRQL value in this table is based on the lowest level of detection in samples contaminated with this common laboratory solvent that can be achieved by reasonable means in a production laboratory.

TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL) (CONT'D.)

	Semivolatiles	CAS Number	Quantitation Limits Water ug/L
1.	Phenol	108-95-2	5
2.	bis-(2-Chloroethyl)ether	111-44-4	5
3.	2-Chlorophenol	95-57-8	5
4.	2-Methylphenol	95-48-7	5
5.	2,2'-oxybis(1-Chloropropane)	108-60-1	5
6.	4-Methylphenol	106-44-5	5
7.	N-Nitroso-di-n-propylamine	621-64-7	5
8.	Hexachloroethane	67-72-1	5
9.	Nitrobenzene	98-95-3	5
10.	Isophorone	78-59-1	5
11.	2-Nitrophenol	88-75-5	5
12.	2,4-Dimethylphenol	105-67-9	5
13.	bis-(2-Chloroethoxy)methane	11-91-1	5
14.	2,4-Dichlorophenol	120-83-2	5
15.	1,2,4-Trichlorobenzene	120-82-1	5
16.	Naphthalene	91-20-3	5
17.	4-Chloroaniline	106-47-8	5
18.	Hexachlorobutadiene	87-68-3	5
19.	4-Chloro-3-methylphenol	59-50-7	5
20.	2-Methylnaphthalene	91-57-6	5
21.	Hexachlorocyclopentadiene	77-47-4	5
22.	2,4,6-Trichlorophenol	88-06-2	5
23.	2,4,5-Trichlorophenol	95-95-4	20
24.	2-Chloronaphthalene	91-58-7	5
25.	2-Nitroaniline	88-74-4	20
26.	Dimethylphthalate	131-11-3	5
27.	Acenaphthylene	208-96-8	5
28.	2,6-Dinitrotoluene	606-20-2	5
29.	3-Nitroaniline	99-09-2	20
30.	Acenaphthene	83-32-9	5
31.	2,4-Dinitrophenol	51-28-5	20
32.	4-Nitrophenol	100-02-7	20
33.	Dibenzofuran	132-64-9	5

TARGET COMPOUND LIST (TCL) AND
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)
(CONT'D.)

	Semivolatiles	CAS Number	Quantitation Limits Water ug/L
34.	2,4-Dinitrotoluene	121-14-2	5
35.	Diethylphthalate	84-66-2	5
36.	4-Chlorophenyl-phenylether	7005-72-3	5
37.	Fluorene	86-73-7	5
38.	4-Nitroaniline	100-01-6	20
39.	4,6-Dinitro-2-methylphenol	534-52-1	20
40.	N-Nitrosodiphenylamine	86-30-6	5
41.	4-Bromophenyl-phenylether	101-55-3	5
42.	Hexachlorobenzene	118-74-1	5
43.	Pentachlorophenol	87-86-5	20
44.	Phenanthrene	85-01-8	5
45.	Anthracene	120-12-7	5
46.	Di-n-butylphthalate	84-74-2	5
47.	Fluoranthene	206-44-0	5
48.	Pyrene	129-00-0	5
49.	Butylbenzylphthalate	85-68-7	5
50.	3,3'-Dichlorobenzidine	91-94-1	5
51.	Benzo(a)anthracene	56-55-3	5
52.	Chrysene	218-01-9	5
53.	bis-(2-Ethylhexyl)phthalate	117-81-7	5
54.	Di-n-octylphthalate	117-84-0	5
55.	Benzo(b)fluoranthene	205-99-2	5
56.	Benzo(k)fluoranthene	207-08-9	5
57.	Benzo(a)pyrene	50-32-8	5
58.	Indeno(1,2,3-cd)pyrene	193-39-5	5
59.	Dibenz(a,h)anthracene	53-70-3	5
60.	Benzo(g,h,i)perylene	191-24-2	5

TARGET COMPOUND LIST (TCL) AND
CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)
(CONT'D.)

Pesticides/PCBs	CAS Number	Quantitation Limits Water ug/L
1. alpha-BHC	319-84-6	0.01
2. beta-BHC	319-85-7	0.01
3. delta-BHC	319-36-8	0.01
4. gamma-BHC (Lindane)	58-89-9	0.01
5. Heptachlor	76-44-8	0.01
6. Aldrin	309-00-2	0.01
7. Heptachlor epoxide	1024-57-3	0.01
8. Endosulfan I	959-98-8	0.01
9. Dieldrin	60-57-1	0.02
10. 4,4'-DDE	72-55-9	0.02
11. Endrin	72-20-8	0.02
12. Endosulfan II	33213-65-9	0.02
13. 4,4'-DDD	72-54-8	0.02
14. Endosulfan sulfate	1031-07-8	0.02
15. 4,4'-DDT	50-29-3	0.02
16. Methoxychlor	72-43-5	0.10
17. Endrin ketone	53494-70-5	0.02
18. Endrin aldehyde	7421-36-3	0.02
19. alpha-Chlordane	5103-71-9	0.01
20. gamma-Chlordane	5103-74-2	0.01
21. Toxaphene	8001-35-2	1.0
22. Aroclor-1016	12674-11-2	0.20
23. Aroclor-1221	11104-28-2	0.40
24. Aroclor-1232	11141-16-5	0.20
25. Aroclor-1242	53469-21-9	0.20
26. Aroclor-1248	12672-29-6	0.20
27. Aroclor-1254	11097-69-1	0.20
28. Aroclor-1260	11096-82-5	0.20

Addendum 2

Instrument Detection Limits and Spiking Levels

Element	Required Instrument Detection Limit µg/L (1)			Required Matrix Spike Concentrations µg/L		
	GFAA	ICP	Other	GFAA	ICP	Other
Aluminum		80			2000	
Antimony		60			500	
Arsenic	5			20		
Barium		20			2000	
Beryllium		5			50	
Cadmium (2)	0.5			2	50	
Calcium (3)		1000			50000	
Chromium		10			200	
Cobalt		10			500	
Copper		10			250	
Iron		100			1000	
Lead (2)	2			20	500	
Magnesium (3)		1000			25000	
Manganese		10			200	
Mercury			0.2			1.0
Nickel		20			400	
Potassium (3)		2000			20000	
Selenium	2			10		
Silver		5			50	
Sodium (3)		1000			50000	
Thallium	2			20		
Vanadium		10			500	
Zinc		20			200	
Cyanide			10			100

(1) Instrument Detection Limits (IDLs) must be met before any samples are analyzed. The laboratory may submit its quarterly Form 10 with each case if all IDLs meet the detection limits. If detection limits for ICP metals cannot be met using ICP, GFAA must be used.

(2) ICP analytical results may be reported for Pb and Cd only if the values are greater than 10 times the ICP IDLs. If any ICP result is reported, all ICP audits must be reported for that element including the matrix spike.

(3) Report the Ca, Mg, Na, and K matrix spike results on a separate form 5A.

Rev. 7.0, 4/92

half the contaminant concentration but not less than the quantitation limit or a fifth of the threshold limit.

10.3.3 The purpose of the matrix spike is to monitor the adequacy of the analytical concentration of the contaminant measured in the extract is within 20% of the appropriate regulatory level.

10.5.1 The method of standard additions shall be employed as the internal calibration variable. Derive concentrations for unknowns using the internal calibration curve as if it were an external calibration curve.

10.6 Samples must undergo TCLP extraction within the following time periods:

SAMPLE MAXIMUM HOLDING TIMES

[Days]

	From: Field collection To: TCLP extraction	From: TCLP extraction To: Preparative extraction	From: Preparative extraction To: Determinative analysis	Total elapsed time
Volatiles	14	NA	14	28
Semi-volatiles	7	7	40	54
Mercury	28	NA	28	56
Metals, except mercury	180	NA	180	360

NA = Not applicable.

If sample holding times are exceeded, the values obtained will be considered minimal concentrations. Exceeding the holding time is not acceptable in establishing that a waste does not exceed the regulatory level. Exceeding the holding time will not invalidate characterization if the waste exceeds the regulatory level.

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

7. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, and 6925.

8. Section 264.301 is amended by revising paragraph (e)(1) to read as follows:

§ 264.301 Design and operating requirements.

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QAS

Addendum 4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 5/14/91

SUBJECT: SAS Requests

FROM: Jan Pels, RSCC 3-2720

TO: all SAS/QAPP Reviewers

In order to insure that CLP labs understand that we will not accept analyses that were not in accordance with the methods specified in an SAS, all SASs must have the following statement in section 7 or 8:

Laboratory data rejection and non-payment will be recommended if the lab uses methods other than those specified in this SAS request.

Also, in order to insure that we get the sample tags, original COCs, airbills, etc., section 9 of the SAS must state:

All original tags, chain of custody forms, SAS packing lists, airbills, and original data must be submitted to the Region within the time-frame listed in section 6 above.

Eventually, all labs will have signed a Basic Ordering Agreement (BOA) which contains these requirements, but until then it is up to the Region to include these specifications in each SAS request.

Please call me if you have any questions.

U.S. Environmental Protection Agency
CLP Sample Management Office
P. O. Box 818, Alexandria, Virginia 22313
PHONE: (703)/557-2490 or FTS/557-2490

SAS Number

SPECIAL ANALYTICAL SERVICES
Client Request

[x] Regional Transmittal [ ] Telephone Request

A. EPA Region/Client: V

B. RSCC Representative: Jan Pels

C. Telephone Number: (312) 353-2720

D. Date of Request:

Site Name:

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delay in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. General description of analytical service requested: Analysis of drinking water/ residential wells for volatiles, semi-volatiles, and pesticides/PCBs with low quantitation limits.

2. Definition and number of work units involved (specify whether whole samples or fractions; whether organics or inorganics; whether aqueous or soil and sediments; and whether low, medium, or high concentration):

low concentration drinking waters

3. Purpose of analysis (specify whether Superfund (Remedial or Enforcement), RCRA, NPDES, etc.):

Superfund

4. Estimated date(s) of collection: _____

5. Estimated date(s) and method of shipment: Next day air.

6. Number of days analysis and data required after laboratory receipt of samples:
Data package should be received in the Region within 14 days on a Sample Delivery Group basis. Holding times for each fraction are defined in the Statement of Work-Document Low Concentration Water for Organics Anal., 6/91.

7. Analytical protocol required (attach copy if other than a protocol currently used in this program):

Analysis per Statement of Work for Low Concentration Water For Organics Analysis, 6/91.

8. Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.): Notify the Region if dilutions are required. If one liter bottles are sent for the ABN and Pest/PCB analyses, the lab must rinse these bottles with the extraction solvent and add to the extraction vessel. Occasionally, monitoring well samples may be sent; in the case where higher levels are suspected, the lab will receive notification when scheduling and the samples will be identified by field samplers on the Traffic Report form or the Chain of Custody form. The lab will need to screen these samples to determine the minimum dilution required; the Region must be notified when dilutions are required for further instructions regarding reporting.

9. Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain-of-Custody documentation, etc.). If not completed, format of results will be left to program discretion.

As per SOW Low Concentration Water for Organics Analysis, 6/91.

10. Other (use additional sheets or attach supplementary information, as needed):

11. Name of sampling/shipping contact: _____

Phone: _____

Summary

SOW Low Concentration Water for Organics Anal., 6/91

The following is a summary of the major differences in the new Organic Low Water Statement of Work as compared to the Organic Multimedia Statement of Work. Data turnaround is 14 days, therefore, the Sample Delivery Group (SDG) is on a 7 day basis. A Complete SDG File (CSF) Inventory requirement replaces the file purge requirement. All original sample documentation, including sample tags, custody forms, airbills, etc., will be shipped directly to the Region with a check off sheet and the complete original data package in 14 days. New forms include the Sample Log-in Sheet (DC-1) and the Document Inventory Sheet (DC-2). The diskette deliverable applies. Performance Evaluation Samples (PES) will be sent with each shipment of samples and will be analyzed on an SDG basis: these samples will be supplied by the EPA and action can be taken if the results score is <75%. No matrix spike/matrix spike dupiicate analyses are required.

VOLATILE ORGANIC COMPOUND ANALYSIS

This fraction's Target Compound List (TCL) contains 40 compounds plus 10 Tentitively Identified Compounds (TIC).

New BFB tuning criteria and procedures are included.

A 7 day holding time is required.

Sample analysis volume is 25 ml.

A Laboratory Control Sample (LCS) composed of 12 compounds is analyzed with each SDG; if LCS recovery limits are not met, re-analysis of all samples in the SDG is required.

One surrogate compound, BFB, is used and has 80-120% recovery limits.

Three internal standards (IS) are used: 1,4-difluorobenzene, chlorobenzene-d5, and 1,4-dichlorobenzene-d4; $\pm$ 40% area differences and RTs of $\pm$ 0.33 min (20 sec) are allowed.

Initial calibration is at 1,2,5,10,and 25 ppb with a continuing calibration at 5 ppb.

Response factors, % relative standard deviation (RSD), and % difference (D) for response factors have control limits that are compound specific for 28/40 of the compounds, with an exemption for 2 compounds out of control with a maximum % RSD or % D of 40; a minimum RF of 0.01 is required for the remaining 12 compounds.

Bromochloromethane, formerly an IS, is now a target compound.

Volatiles (continued)

Cis-1,2-dichloroethene and trans-1,2-dichloroethene are reported separately.

Vinyl acetate has been removed from the target compound list.

Added to the target list are: 1,2-dibromoethane, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, and 1,2-dibromo-3-chloropropane.

Contract required quantitation limits (CRQL) are 1 ppb for all compounds except for methylene chloride at 2 ppb, and acetone, 2-butanone, 4-methyl-2-pentanone and 2-hexanone at 5 ppb.

Subambient temperature GC programming is required.

Blank concentrations of all target compounds must be < CRQL.

Blank TIC concentrations must be < 2.0 ppb.

SEMIVOLATILE ORGANIC COMPOUND ANALYSIS

This fraction's TCL includes 60 compounds plus 20 TICs.

New DFTPP tuning criteria and procedures are included.

A single continuous liquid-liquid extraction at pH of 2 is required.

A Laboratory Control Sample (LCS) containing 15 compounds is analyzed with each SDG ; if LCS recovery limits are not met, reanalysis of all samples in the SDG is required.

Six surrogates and six internal standards (the same as the current RAS SOW) are added to all samples, standards, blanks, etc.

The initial calibration will be at 20, 50, 80, 100, and 120 nanograms with a continuing calibration at 20 ng.

Response factors, % relative standard deviation , and % difference for response factors have control limits that are compound specific for 41/60 compounds, with an exemption for up to four compounds out of control with a maximum % RSD or % D of 40; a minimun RF of 0.01 for all other compounds is required.

The following compounds have been moved from the ABN target list to the VOA target list: 1,3-dichlorobenzene, 1,4-dichlorobenzene, and 1,2-dichlorobenzene.

The following compounds have been removed from the ABN target list: benzyl alcohol, bis(2-chloroisopropyl)ether, and benzoic acid.

Added to the ABN target list is 2,2'-oxybis (1-chloropropane).

Contract required quantitation limits are 5 ppb for all compounds except for 2,4,5-trichlorophenol, 2-nitroaniline, 3-nitroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, 4,6-dinitro-2-methylphenol and pentachlorophenol at 20 ppb.

Blank concentrations of all target compounds must be < CRQL.

Blank TIC concentrations must be < 10 ppb.

PESTICIDES/PCB COMPOUND ANALYSIS

This fraction's TCL contains 21 pesticides and 7 PCBs.

Continous liquid/liquid extraction is required. Two wide bore fused silica columns are employed.

A Laboratory Control Sample (LCS) containing 7 pesticides is analyzed with each SDG; it LCS recovery limits are not met, reanalysis of all samples in the SDG is required.

Two surrogates, tetrachloro-m-metaxylene and decachlorobiphenyl with recovery limits of 60-150% are added to all samples, standards, blanks, etc.; reanalysis is required if these limits are not met.

An initial three point calibration for single component compounds and surrogates is required. The initial calibration sequence is new.

A performance evaluation mixture is prepared by the lab to check for degradation/breakdown of endrin and DDT; in addition, 100% resolution for all single component compounds and surrogates is required in this mixture.

A resolution check mixture is analyzed and reported on a new form (6LCG).

Florisil cleanup is required: for each lot of florisil cartridges, a midpont concentration of Standard Mixture A with 2,4,5-trichlorophenol added is eluted through a cartridge and these florisil cartridge check results are reported on a new form (9LCA); recovery limits are 80-110% for the A mixture compounds and <5% for 2,4,5-trichlorophenol.

A flag of 'P' is applied to a sample result if the concentrations calculated on the quantitation and confirmation columns have a %D >25.

Contract required quantitation limits for the single component pesticides are 0.01 or 0.02 ppb; the quantitation limit for toxaphene is 1.0 ppb and for methoxychlor is 0.1 ppb; PCB quantitation limits are 0.2-0.4 ppb.

The resolution of 2 adjacent peaks in the mid-point concentration of Individual standard A and B in the initial calibration must be $\geq$ 90%

U.S. Environmental Protection Agency
CLP Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313
PHONE: (703)/557-2490 or FTS/557-2490

SAS Number

SPECIAL ANALYTICAL SERVICES
Client Request

☐ Regional Transmittal ☐ Telephone Request

A. EPA Region/Client: Region V
B. RSCC Representative: Jan Pels
C. Telephone Number: (312)353-2720
D. Date of Request:
E. Site Name:

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delay in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. General description of analytical service requested:

Analysis of drinking water and/or residential well water for metals and cyanide using detection limits lower than ILM01 (See Attachment II). Five elements are to be determined by GFAA using the single analytical spiking method. GFAA analysis of samples free of particulates may be conducted on the undigested sample.

2. Definition and number of work units involved:

3. Purpose of analysis:

Superfund

4. Estimated date(s) of collection:

5. Estimated date(s) and method of shipment:

6. Number of days analysis and data required after laboratory receipt of samples: 14 days

7. Analytical protocol required:

Inorganic analysis as per ILM01 with the exceptions listed in Attachments II and III. ICP emission spectroscopy, mercury, and cyanide analyses follow the SOW mentioned above for sample preparation and analysis protocol with the instrument detection limits and matrix spike levels given in Attachment II and the QC audits as described in Attachment III. GFAA analyses may be run on undigested samples if the samples are free of particulates. If particulates are present the samples are to be digested as per the SOW specified above. Additional instructions for conducting the GFAA analyses are included in Attachment III. Special instrument detection limits and matrix spike levels are listed on Attachment II. Calibration standards must be acid matrix matched for undigested samples when analyzing undigested samples and acid matrix matched for digested samples when analyzing digested samples.

8. Special technical instruction:

1) Check the pH of each sample (wide range pH paper is acceptable). If the pH values are outside of the specified limits of ILM01, contact Region V for instructions.

2) Instrument Detection Limits (IDLs) of Attachment II are to be met prior to any sample analysis.

3) Spike Ca, Mg, K, and Na and all other parameters as per Attachment II. A separate sample aliquot shall be used for the Ca, Mg, K, and Na spike unless documentation is provided that no contamination results for the other analytes.

The GFAA protocol is specified in Attachment III. The frequency and control limits of certain audits differ from those specified in ILM01.

9. Analytical results required:

ILM01 deliverables must be provided. All forms and raw data must be original as much as possible. Changes shall be made to forms 5A, 6, and 10 to reflect SAS contract limits and IDLs where appropriate.

10. Other

_____

_____

_____

11. Name of sampling/shipping contact: _____

Phone: _____

I. Data Requirements

Parameter:	Detection Limit	Precision Required (±% or conc.)
ICP Metals GFAA Metals	See Attachment II. See Attachment II.	± 10 % RPD or Duplicate Differences less than SAS IDLs listed in Attachment II for sample concentrations less than 5 times the SAS IDLs.
Mercury Cyanide	See Attachment II. See Attachment II.	± 15 % RPD or Duplicate Differences less than SAS IDLs listed in Attachment II for sample concentrations less than 5 times the SAS IDLs.

II. QC Requirements

Audits Required	Frequency of Audits	Limits* (% or conc.)
ICP -AES Hg, CN	8.A of Attachment III	
GFAA undigested (As, Cd, Pb, Se, Tl)	8.B of Attachment III	
GFAA digested (As, Cd, Pb, Se, Tl)	8.C of Attachment III	

III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:

For ICP, Hg, and CN take corrective action as specified in ILM01 and repeat the analysis. For GFAA take corrective action as specified in ILM01 and repeat the analysis except in the case of the analytical spike audit. For this audit follow the GFAA decision tree in Attachment IV. Contact SMO if further clarification is required.

Please return this request to the Sample Management Office as soon as possible to expedite processing of your request for Special Analytical Services. Should you have any questions or need any assistance, please call the Sample Management Office.

Rev. 7.0, 4/9

Attachment II

Instrument Detection Limits and Spiking Levels

Element	Required Instrument Detection Limit µg/L (1)			Required Matrix Spike Concentrations µg/L		
	GFAA	ICP	Other	GFAA	ICP	Other
Aluminum		80			2000	
Antimony		60			500	
Arsenic	5			20		
Barium		20			2000	
Beryllium		5			50	
Cadmium (2)	0.5			2	50	
Calcium (3)		1000			50000	
Chromium		10			200	
Cobalt		10			500	
Copper		10			250	
Iron		100			1000	
Lead (2)	2			20	500	
Magnesium (3)		1000			25000	
Manganese		10			200	
Mercury			0.2			1.0
Nickel		20			400	
Potassium (3)		2000			20000	
Selenium	2			10		
Silver		5			50	
Sodium (3)		1000			50000	
Thallium	2			20		
Vanadium		10			500	
Zinc		20			200	
Cyanide			10			100

(1) Instrument Detection Limits (IDLs) must be met before any samples are analyzed. The laboratory may submit its quarterly Form 10 with each case if all IDLs meet the detection limits. If detection limits for ICP metals cannot be met using ICP, GFAA must be used.

(2) ICP analytical results may be reported for Pb and Cd only if the values are greater than 10 times the ICP IDLs. If any ICP result is reported, all ICP audits must be reported for that element including the matrix spike.

(3) Report the Ca, Mg, Na, and K matrix spike results on a separate form 5A.

Attachment III

Special Instructions

1. Sample aliquots shall be preserved in the field in the following manner:

   a) One liter aliquot for metals (excluding mercury) shall be preserved with 5 mL of 50% nitric acid (50% of concentrated HNO3) to a pH less than 2.

   b) One liter aliquot for mercury shall be preserved to a final concentration of 0.5% concentrated nitric acid (V/V) and 0.05% potassium dichromate (W/V).

   c) One liter aliquot for cyanide shall be preserved with 5 mL of 6N sodium hydroxide solution to a pH greater than 12.

2. Cd and Pb must be run by GFAA unless the sample concentrations are greater than 10 times the ICP IDLs. Sb may be run by ICP. GFAA analysis shall be performed as specified in ILM01 with the following exceptions:

   a) The calibration range shall be 0-40 µg/L for As, Pb, Se, and Tl; the calibration range for Cd shall not exceed 0-4 µg/L.

   b) Analytical spike levels shall be 20 µg/L for As, Se, Pb, and Tl; the Cd analytical spike level shall be 50% of the concentration of the highest standard.

   c) Any sample whose analytical spike recovery is outside the range of 85-115 % shall be assayed using the method of standard additions (MSA). See the GFAA Analysis Scheme in Attachment IV.

   d) MSA spike levels shall be 0, 10, 20, 30 µg/L for As, Se, Pb, and Tl; the MSA spike levels for Cd shall be either 0, 0.5, 1.0, 1.5 µg/L or 0, 1, 2, 3 ug/L.

   e) For GFAA samples run by method of standard addition (MSA), the calibration blank and verification samples must also be run by MSA. Samples MSA correlation coefficients must be greater than 0.995; calibration blank MSA correlation coefficients must be greater than 0.998. The following is a typical run order:

      i) Calibration blank and three spikes.
      ii) Calibration verification and three spikes.
      iii) CRDL standard, each with three spikes.
      iv) Five samples, each with three spikes.
      v) Calibration blank and three spikes.
      vi) Calibration verification and three spikes.
      vii) Succeeding sets of five samples, CCBs, and CCVs.

   If the sample concentration exceeds the highest spike level, dilute and reanalyze.

3. Compliance with the low GFAA SAS ILDs may require that the laboratory consider the use of matrix modifiers, L'vov platform, and Zeeman background correction.

   a) Zeeman or Smith/Hieftje or equivalent background correction is required for Arsenic, Selenium, and Thallium. Deuterium is not allowed. If Smith/Hieftje background is used, each element must be run individually.

b) The matrix modifiers for arsenic and selenium specified in ILM01 shall be used. Matrix modifiers proposed by the laboratory for Pb, Cd, and Tl must be approved by Region 5 prior to use and documented in the raw data.

4. Samples that are clean and contain no particulates may be analyzed for GFAA metals directly without digestion. For these analyses a sample duplicate (undigested) shall be run for every 10 samples. A CRDL sample shall be analyzed during each analytical run. All other samples shall be digested as specified in ILM01.

5. Samples identified as field blanks shall not be used for preparing spikes, duplicates, or serial dilutions. The traffic report/chain-of custody form designates which sample is to be used for QC; if this is not indicated, call the sample management office (SMO).

6. Each calibration blank and QC audit solution must contain the same nitric acid concentration as the samples or diluted samples. Matrix concentrations for all solutions must be documented in the raw data.

7. The laboratory shall analyze one Performance Evaluation Sample (PES) with every sample delivery group. The PES will assist the Agency in monitoring contractor performance. The sample will be shipped with the field samples and shall be prepared and analyzed as a routine field sample. Results shall be reported likewise. The PES may be designated as a single blind QC material or as full volume samples along with other environmental samples as a double blind. The laboratory will not be informed of the analytes in the PES or their concentration. The Agency will inform the contractor of unacceptable performance. Detailed information regarding the PES is listed in Attachment V.

Attachment III

QC Requirements

8.A ICP Metals, Mercury, Cyanide

Audits Required	Frequency of Audits	Limits* (% or conc.)
ICV, CCV, ICP serial dilution, ICP ICS, Distilled Cyanide standard	As per ILM01.	As per ILM01.
Calibration Blanks	Beginning of run and 1 in 10 thereafter.	Less than IDL.
Preparation Blank	1 in 10 samples.	Less than SAS IDL of Attachment II.
CRDL Standard (At SAS detection levels)	As per ILM01.	None yet established.
Duplicate	1 in 10 samples.	10% RPD (ICP), 15% RPD (Hg, CN); difference less than SAS IDL for sample concentrations less than 5 times SAS IDL.
Matrix Spike (ICP) (ICP-Ca,Mg,K,Na)	1 in 10 samples.	85-115% Recovery.
Matrix Spike (Hg,CN)	1 in 10 samples.	80-120% Recovery.
Digested Lab Control	1 per sample set.	85-115% Recovery.
Performance Evaluation Sample	1 per sample set.	Blind sample. Acceptability determined by the Agency.

Attachment III

QC Requirements

8.B GFAA Undigested Samples

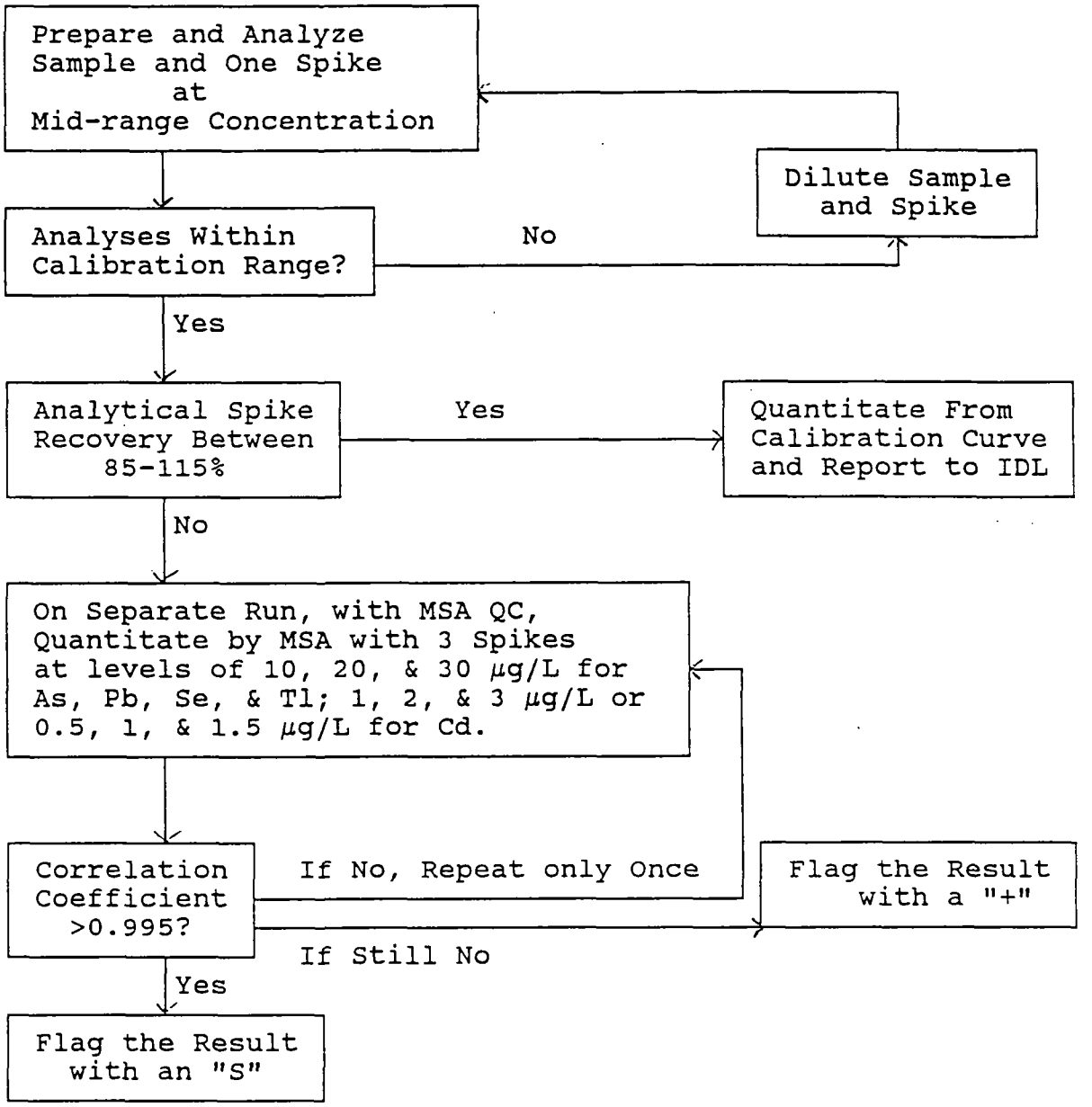
Audits Required	Frequency of Audits	Limits* (% or conc.)
Calibration Blanks	Initially and after every 10 samples; initially and after every 5 samples (MSA).	Less than IDL.
Calibration Verifications	Initially and after every 10 samples; initially and after every 5 samples (MSA).	90-110% Recovery.
CRDL Standard (At SAS detection levels)	As per ILM01.	None yet established.
Performance Evaluation Sample	1 per sample set.	Blind sample. Acceptability determined by the Agency.
Duplicate	1 in 10 samples.	10% RPD; difference less than SAS IDL for sample concentrations less than 5 times SAS IDL.
Analytical Spike	1 for each sample and audit except calibration blanks and verifications.	85-115% Recovery.

Attachment III

QC Requirements

8.C GFAA Digested Samples

Audits Required	Frequency of Audits	Limits* (% or conc.)
Calibration Blanks	Initially and after every 10 samples; initially and after every 5 samples (MSA).	Less than IDL.
Preparation Blank (digested)	1 in 10 samples.	Less than SAS IDL.
Calibration Verifications	Initially and after every 10 samples; initially and after every 5 samples (MSA).	90-110% Recovery.
CRDL Standard (At SAS detection levels)	As per ILM01.	None yet established.
Duplicate (digested)	1 in 10 samples.	10% RPD; difference less than SAS IDL for sample concentrations less than 5 times SAS IDL.
Matrix Spike (digested)	1 in 10 samples.	85-115% Recovery.
Performance Evaluation Sample	1 per sample set.	Blind sample. Acceptability determined by the Agency.
Lab Control Sample (digested)	1 per sample set.	85-115% Recovery.
Analytical Spike	1 for each sample and audit except calibration blanks and verifications.	85-115% Recovery.


Prepare and Analyze Sample and One Spike at Mid-range Concentration
Dilute Sample and Spike
Analyses Within Calibration Range?
No
Yes
Analytical Spike Recovery Between 85-115%
Yes
Quantitate From Calibration Curve and Report to IDL
No
On Separate Run, with MSA QC, Quantitate by MSA with 3 Spikes at levels of 10, 20, & 30 µg/L for As, Pb, Se, & Tl; 1, 2, & 3 µg/L or 0.5, 1, & 1.5 µg/L for Cd.
Correlation Coefficient >0.995?
If No, Repeat only Once
Flag the Result with a "+"
If Still No
Yes
Flag the Result with an "S"

Attachment V

Performance Evaluation Samples

Although intralaboratory QC may demonstrate contractor and method performance that can be tracked over time, an external performance evaluation program is an essential feature of a QA program. As a means of measuring Contractor and method performance, Contractors participate in interlaboratory comparison studies conducted by the EPA. Results from the analysis of these performance evaluation samples (PES) will be used by the EPA to verify the Contractor's continuing ability to produce acceptable analytical data. The results are also used to assess the precision and accuracy of the analytical methods for specific analytes.

The laboratory will not be informed of the analytes in the PES or their concentration. The Contractor must prepare, analyze, and report the results of one PES per SDG, if available.

The laboratory will receive the PES in ampules or as full volume samples from the Agency. The ampules will come with instructions concerning the preparation procedure required for the PES. Prepare and analyze the PES using the procedure described in this SAS. All contract required QC must also be met.

In addition to PES preparation and analysis, the Contractor will be responsible for correctly identifying and quantifying the analytes included in the PES. SMO will notify the Contractor of unacceptable performance.

Contractors are required to analyze the samples and return the data package and all raw data within the contract required turnaround time.

The Contractor's results on the laboratory evaluation samples will determine the Contractor's performance as follows:

1. Acceptable, No Response Required (Score greater than or equal to 90 percent):

   Data meets most or all of the scoring criteria. No response is required.

2. Acceptable, Response Explaining Deficiency(ies) Required (Score greater than or equal to 75 percent but less than 90 percent):

   Deficiencies exist in the Contractor's performance.

   Within 14 days of receipt of notification from EPA, the Contractor shall describe the deficiency(ies) and the action(s) taken to correct the deficiency(ies) in a letter to SMO.

   An alternative delivery schedule may be proposed by the Contractor, but it is the sole decision of SMO to approve or disapprove the alternate delivery schedule. If an alternate delivery schedule is proposed, the Contractor shall describe in a letter to SMO why he/she is unable to meet the delivery schedule listed in this section. SMO may not grant an extension for greater than 14 days from the Contractor's response letter to the laboratory evaluation sample report. The

Contractor shall proceed and not assume that an extension will be granted until so notified by SMO

3. Unacceptable Performance, Response Explaining Deficiency(ies) Required (Score less than 75 percent):

Deficiencies exist in the Contractor's performance to the extent that the National Program Office has determined that the Contractor has not demonstrated the capability to meet the contract requirements.

Within 14 days of receipt of notification from the Contractor shall describe the deficiency(ies) and the action(s) taken to correct the deficiency(ies) in a letter to SMO

An alternative delivery schedule may be proposed by the Contractor, but it is the sole decision of the SMO to approve or disapprove the alternate delivery schedule. If an alternate delivery schedule is proposed, the Contractor shall describe in a letter to SMO why he/she is unable to meet the delivery schedule listed in this section.

SMO MAY not grant an extension for greater than 14 days from the Contractor's response letter to the laboratory evaluation sample report.

The Contractor shall be notified by SMO concerning the remedy for the unacceptable performance. A Contractor may expect, but SMO is not limited to the following actions: reduction of the number of samples sent under the contract, suspension of sample shipment to the Contractor, an On-Site laboratory evaluation, ICP/MS tape audit (if appropriate), data package audit, remedial performance evaluation sample, and/or a contract sanction such as a Cure Notice.

Note: A Contractor's prompt response demonstrating that corrective actions have been taken to ensure the Contractor's capability to meet contract requirements may facilitate continuation of full sample delivery.

If the Contractor fails to adhere to the requirements listed in this section, a Contractor may expect, but the Agency is not limited to the following actions: reduction of the number of samples sent under the contract, suspension of sample shipment to the Contractor, an On-Site laboratory evaluation, ICP/MS tape audit (if appropriate), data package audit, remedial performance evaluation sample, and/or a contract sanction such as a Cure Notice.

ATTACHMENT 7 (Cont.)

g. Use only the methods specified above or obtain approval of CPMS, CRL prior to use of other method. Test procedure description, and description of specific measurement principles including equivalency to each of the 10 items of Figure 29-1 of MSA, part II and sample pretreatmenst of Section 29-3, MSA, Part II.

h. Laboratory performing Total Carbon determinations must use and have a recognized procedure for removal of any inorganic carbon in sample.

ATTACHMENT 8

A variety of apparatus, instrumentation, sample preparation systems and read-outs can be used. It is the responsibility of the laboratory to provide appropriate QC audits and QC data with each set of samples tested.

If instrumentation requires calibration, provide calibration curve, including zero concentration standard and preparation blanks. Provide positive control (a test sample prepared independently from calibration standards) that provides a measure of accuracy of system. This should be done for all systems including gravimetric read-outs.

ATTACHMENT 9
Analytical Results Required

As part of Case Narrative, attach description of test procedure and instrumentation used for measurement of Total C and removal of any Inorganic C. Test procdure description must include sufficient information that the nature of specific analytical result deliverables can be determined including QC audits. In Case Narrative, discuss any problem type samples (including peat or muck soils), limitations on any sample results, and soultion taken to resolve any problems. A sample preparation log will be provided, as appropriate.

Bench record tabulating any order of any sample weights and tare weights of absorbed CO_2, instrument calibrations, blanks, QA audits, etc., must be provided along with copies of any worksheets used to calculate results. Include copies of any instrument readouts. All must be legible. Report results as % organic Carbon on a dry weight basis (103-105°), using guidance in % solids SAS. Note that the analysis is performed on an air dried aliquot but that results must be reported on a dry weight basis (103-105°).

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria 22313
703-557-2490 FTS .490

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable)	Case No.

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier

Regional Information	Sampler *(Name)*	Airbill Number

Non-Superfund Program	Sampler Signature	5. Ship To

Site Name	3. Type of Activity	Lead	Pre-Remedial	Remedial	Removal
	SF			RIFS	CLEM
	PRP		PA	RD	REMA
	ST		SSI	RA	REM
	FED		LSI	O&M	OIL
				NPLD	UST

City, State	Site Spill ID

6. Preservative *(Enter in Column D)*
1. HCl
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Other (SAS) *(Specify)*
6. Ice only
N. Not preserved

7. Sample Description *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) *(Specify)*

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp / Grab	D Preservative from Box 6	E RAS Analysis VOA	E RAS Analysis BNA	E RAS Analysis Pest/PCB	E RAS Analysis High ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Designated Field QC

Shipment for Case complete? (Y/N)	Page 1 of ____	Sample used for a spike and/or duplicate	Additional Sampler Signatures	Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Received by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks Is custody seal intact? Y/N/none	

EPA Form 9110-2 (Rev. 5-91) **Replaces EPA Form (2075-7), previous edition which may be used**

DISTRIBUTION:
Blue - Region Copy Pink - SMO Copy White - Lab Copy Yellow - Lab Copy for Return to SMO

Split Samples ☐ Accepted *(Signature)*
☐ Declined

Addendum 8

O014201

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria 22313
703-557-2490 FTS 2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No.

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
Regional Information		Sampler *(Name)*		Airbill Number	
Non-Superfund Program		Sampler Signature		5. Ship To	
Site Name		4. Type of Activity	Lead / Pre-Remedial / Remedial / Removal		
City, State	Site Spill ID	SF / PRP / ST / FED	PA / SSI / LSI	RIFS / RD / RA / O&M / NPLD	CLEM / REMA / REM / OIL / UST

6. Preservative *(Enter in Column D)*
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (SAS) *(Specify)*
N. Not preserved

7. Sample Description *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) *(Specify)*

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/ Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Designated Field QC

Addendum 9

Shipment for Case complete? (Y/N)	Page 1 of ____	Sample used for a spike and/or duplicate	Additional Sampler Signatures	Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Received by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks Is custody seal intact? Y/N/none	

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
Green - Region Copy Pink - SMO Copy White - Lab Copy Yellow - Lab Copy for Return to SMO

Split Samples ☐ Accepted *(Signature)*
☐ Declined

I 014401

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN STREET
CHICAGO, IL 60604

REPLY TO THE ATTENTION OF:

5SMQA

MEMORANDUM

DATE: NOV 21 1991

SUBJECT: Final Bottle Requirements for Superfund Projects

FROM: Valerie J. Jones
Regional Quality Assurance Manager

TO: John Kelley, Chief
OH/MN Remedial Response Branch

James Mayka, Chief
MI/WI Remedial Response Branch

Jonas Dikinis, Chief
IN/IL Remedial Response Branch

Attached please find a copy of the finalized standard language for the bottle requirements. This statement should be incorporated in the section titled, "Sample Container Preparation, Sample Preservation, and Maximum Holding Time", of the Field Sampling Plan (FSP). In the QAPjP, monitoring the bottle quality should be included as one of the responsibilities of the contractor. Please distribute this information, including a copy of the bottle requirements to each of your staff.

If you have any questions regarding this memo, please contact me at 3-2306 or George Schupp, of my staff, at 6-6221.

Attachment

cc: Jodi Traub, 5HS
Charles Elly, 5SCRL
Kaushal Khanna, 5HS

NOV 21 1991

Bottle Requirements

The contaminant-free sample containers (bottles) used for analyzing CLP TCL and TAL analytes for this sampling effort will be prepared according to the procedures specified in U.S. EPA's **"Specifications and Guidance for Obtaining Contaminant-Free Sample Containers, April 1990"** attached document. It will be assured that the bottles used for the sampling activity do not contain target organic and inorganic contaminants exceeding the level specified in the above mentioned document. For non-CLP TCL and TAL types of analytes, bottles either should be cleaned in the same way as for the similar types of analytes or it will be negotiated with the bottle supplier(s) to clean and test the bottles for the analytes of interest to insure that the contaminant levels of those analytes do not exceed approximately 1/3 of the required quantitation limits. Specifications for the bottles will be verified by checking the supplier's certified statement and analytical results for each bottle lot, and will be documented on continuing basis. This data will be maintained in the project evidence file (for a Fund-lead site-in a central ARCS' file) and will be available, if requested, for EPA review.

In addition, the data for field blanks, rinsate blanks, and trip blanks, etc., will be monitored for contamination, and corrective actions will be taken as soon as a problem is identified. This will be accomplished either by discontinuing the use of a specific bottle lot, contacting the bottle supplier(s) for re-testing the representative bottle from a suspect lot, re-sampling the suspected samples, validating the data taking into account that the contaminants could be introduced by the laboratory (i.e., common lab solvents, sample handling artifacts, etc.) or could be bottle QC problem, so as to make an educated determination of whether the bottles and hence the data are still usable, etc., whichever is appropriate.

For the Fund-lead projects, the corrective actions will be conducted in a comprehensive manner in order to avoid the use of identified contaminated lot(s) for other projects, and to insure that if the bottle supplier(s) is deemed unresponsive or unable to provide cleaned bottles as specified, other EPA projects are not negatively impacted by the use of non-compliant bottles.